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[Continued from page 256.]

Although the proofs from which the above views are derived are abundant and obvious to every intelligent observer, yet I am desirous of corroborating my own opinion by testimony in which the public will repose undoubting confidence. For this purpose I here introduce a few letters from eminent physicians, whose characters are a guaranty for the correctness of their statements. The circular, to which the letters are a reply, is prefixed.

CIRCULAR.

To — — —

MY DEAR SIR,—Ever since I became at all acquainted with the Laws of Health and Life, I have had daily and hourly occasion to lament the unnecessary as well as immense loss, which is suffered by individuals, and by the community, in consequence of the violation of those laws.

The loss consists in the personal suffering of many, with its attendant expenses;—in the impaired ability for usefulness of a still larger number;—and in the premature death of a vast majority of mankind.

In looking at these calamities with a view to their prevention or diminution, it seems to me important that a distinction should be made between those transgressions of the law which arise from ignorance merely, and those which are committed by yielding to the impulses of inordinate appetites. For the prevention of those which flow solely from ignorance, mere knowledge will be an antidote; but to prevent those which punish the improper indulgences of appetite, some change must be effected in the moral condition of the patient. Even in the latter case, however, a clear knowledge of the benefits naturally resulting from an observance of the laws of health and life, would come powerfully in aid of a moral reformation.

I am aware that there is a class of cases which do not fall exclusively under either of these heads,—cases which may be called *mixed*, because they include a surrender to the dominion of appetite, notwithstanding certain vague and obscure notions,—a sort of half-knowledge,—of injurious consequences. If, however, even in this class of cases, that which alone is entitled to be called *knowledge*,—that is, a clear, vivid perception of the consequences attached to an act,—would have saved the victim, I see not why such cases should not be arranged under the head of evils resulting from ignorance.

From a retrospect of your extensive medical practice, and from your observations on health and longevity, I trust you will be enabled to arrive at, or at least to approximate, some pretty definite conclusion, respecting the *proportion* of sickness, physical debility, and premature death, which may be fairly attributed to an ignorance of physiological principles, already discovered, and which most persons would avoid, if proper attention were paid to early education and habits. Or, in other words,—in the present state of the science of Physiology, how great a *proportion* of disease, of suffering, of a diminution of the physical capacity of usefulness, and of the abridgment of life, comes from sheer ignorance, (as contradistinguished from

that which proceeds from causes not known, or from inordinate indulgences,) and which, therefore, we might hope to see averted, if the community had that degree of knowledge which is easily attainable by all.

By stating your conclusions, I think you will furnish a powerful argument in favor of making those conditions on which health and life depend, a subject of study, not only for adults, but especially for the young ;—and, in order to reach the latter class as extensively as possible, you would prove the expediency of introducing the study of Physiology into our Common Schools after the primary studies have been mastered.

Should you do me the favor to reply to this letter, I hope you will not think yourself confined within the narrow outline I have sketched, but will extend your remarks to any topics which will subserve the two great objects I have in view,—namely, the prevention of suffering, and the increase of the physical capabilities of the community.

Very truly, yours, &c. &c.

HORACE MANN,
Secretary of the Board of Education.

Letter from Dr. James Jackson.

HON. HORACE MANN :

MY DEAR SIR,—I agree with you entirely as to the lamentable evils, which arise from the violation of the laws of nature in regard to health and life. You will add much to the benefits you have already conferred on the rising generation, and on the community, if you cause to be instilled into the young, a knowledge of the value of health and of the means of preserving it.

The evils you describe are, undoubtedly, in many instances, incurred from ignorance. An acquaintance with the functions of the living body, and with the causes which influence those functions for good or for evil, would have a great tendency to prevent such evils. But the proportion of cases, in which ignorance alone, "sheer ignorance," is the cause of disease, &c., is not perhaps so large as you are disposed to believe. By far the greatest proportion of cases, in which the health is injured, and life is shortened or rendered useless, unnecessarily, consists of the cases you call "*mixed*." Ignorance has a share in producing them, a greater or less share, but is not the sole cause.

You now ask in how great a portion of all the cases of sickness, impaired health, &c., ignorance is either the sole cause, or co-operates with other causes in producing the result. I find it impossible to give a very precise answer to this inquiry; but I feel assured that the answer should be, *more than one half*. When it is brought to mind that the ignorance of parents is included in the terms of the inquiry, the justice of the answer will probably be admitted by all who are conversant with the subject.

The first great difficulty in the young, and often in those who have passed their youth, is, that they are ignorant of the value of health. They may acknowledge in words, but they do not realize, how much the enjoyment of life is abridged by ill health. Still less are they aware how much the usefulness of one's days may be impaired by disease, or even by chronic ailments, which are scarcely called diseases. While men desire long life, they too often disregard the importance of being able to use all their powers and faculties, unimpaired, during the years they do live. The first thing, therefore, is to make the young understand that they should endeavor to cultivate and maintain all their powers, and be ready to bring them into healthy exercise at all times. To this end, they must learn, not only to be properly equipped for the warfare of life, but also not to take on the burdens of bad habits, which will impede them in their march.

If these views of the importance of sound health be presented clearly and fully to the young, they may then be desirous to learn the art of living well. Teaching principles alone will not insure the practice of this art, but it will promote it. The study of Physiology will lay the foundation. To the common student, who does not intend to devote himself to medicine, it would suffice to learn the great or most important functions of the human system,—such as those by which we convert our nutriment into blood, and, distributing this to the various parts of the body, form from it the various solid and fluid substances; those by which we carry off the useless materials by the various emunctories; those by which we recognise the existence and qualities of the material things around us; and those by which we perform the voluntary motions. To these might be added the changes which the body and mind undergo, from infancy to old age, the mutual influence of the mind and body on each other, and perhaps some others.

A general acquaintance with the matters thus described, which might be illustrated by demonstrations to a very limited extent on brute animals and plants, could, I think, easily be communicated to young people, from fourteen to sixteen years of age. But this instruction in Physiology would not be enough. It should be followed by instruction in hygiene. This is the branch of medical science, which regards the preservation of health and the attainment of long life. Rules on this subject may be given to those who are ignorant of Physiology; but the subject can be presented much more advantageously to those who are not ignorant of it.

The advantages of such instruction as we have in view may be doubted by many persons. I would not exaggerate those advantages, nor hold out expectations which may be disappointed. I should not look for a marked change in the habits of society in any short time. But as knowledge of this kind becomes diffused in the community, there would probably be an increased desire for it; many of the thoughtful would continue to study the matter as they were growing up, and future mothers, at least, would be anxious to apply their learning for the benefit of their children. If they would do this successfully, the generations which are to follow us would be rising in the scale of physical well-being at least. I say physical well-being at least; but I have a full conviction that there would be some corresponding moral improvement. The tendency of physical health, attained by well-trained habits, must, I think, promote that manliness, that virtue, which enables men to keep in the paths of rectitude. There would be fewer of those deviations which one excuses to himself by saying he could not help it. At any rate, some of the evils of life might be mitigated or averted. Meanwhile, the studies proposed connect themselves readily with other branches of natural history. How useful, how beneficial to the mind are all branches of natural history, I need not say to you. Perhaps I owe you an apology for having been led off so much from the immediate object of your inquiry.

I am, dear sir,

With sincere respect,

Your friend and servant,

JAMES JACKSON.

December 16, 1842.

Letter from Dr. S. B. Woodward.

STATE LUNATIC HOSPITAL,
Worcester, Jan. 2d, 1843. }

HON. HORACE MANN:

DEAR SIR,—I have received your late letter, and improve the earliest opportunity to reply.

From the cradle to the grave, we suffer punishment for the violation of the laws of health and life.

In infancy, mismanagement, arising from ignorance or neglect of these laws, not only destroys many lives, but impairs the health of thousands who survive, gives bad development to organs essential to life, and entails the elements of disease and death upon them.

The more common errors are, bandaging the body and limbs, neglect of cleanliness, hot beds, hot and ill-ventilated apartments, bad clothing, covering some parts too much and too closely, and others too little or not at all; bad food, too much feeding, and, especially, administering drugs for those slight indispositions, which, in a short time, would be removed without remedies, &c. Thus the infant is subjected to suffering, to disease and death, before it is responsible for a single error.

The exposures, imprudences and evil habits of the young, are the causes of many of the diseases of that period of life, particularly of CONSUMPTION, the great destroyer of this most interesting portion of the human family. Many of the victims of this disease have a hereditary predisposition transmitted from parents, and also feel the influence of a neglect of proper training in the periods of infancy and childhood.

As far as I have known, the educated and wealthy classes of society manage their children with less regard to the natural laws of life, than the common-sense yeomanry of the country. They are less healthy, less robust, and die prematurely in greater proportion.

The former restrain from active pursuits, and pamper appetite too much,—often preferring delicacy of appearance to vigor of health; and by this mistake they bring suffering and disease upon their offspring, which is felt in all after-life.

The latter, by encouraging activity and simplicity of diet, insure for their children vigorous health, a power of repelling the causes of disease, and of throwing off disease when it attacks them.

Considering the many errors which we adopt and adhere to in life, the many imprudences of which we are guilty, the hazards we run, and the exposures which we voluntarily make, which are rash and unnecessary, it is not surprising that a large proportion of our suffering and the premature deaths which take place in the community, are ascribable to violations of the natural laws of life and health.

Death from old age is rare. Many of the aged die of acute disease, which almost always arises from imprudent exposure, and violation of the laws of health. Many such persons have sufficient general vigor to hold out much longer than is common; but the ravages of disease upon one organ destroy its functions, the system succumbs to local causes, and death follows.

I have no doubt that *half* the evils of life, and *half* the deaths that occur among mankind, arise from ignorance of these natural laws; and that a thorough knowledge of them would diminish the sufferings incident to our present state of being in very nearly the same proportion.

Yours, very respectfully,

S. B. WOODWARD.

Letter from Dr. Edward Jarvis.

CONCORD, Mass., 13th Dec., 1842.

TO THE HON. HORACE MANN:

MY DEAR SIR,—Yours of Sept. I received in due time, requesting my opinion of the proportions of disease caused by ignorance of our organization and physical powers, or from neglect of this knowledge. My records and data, on which I could find a more accurate opinion, are in Kentucky; and therefore I have hesitated until now, to give any answer.

From an observation of thirteen years, I have been led to believe that *three fourths*, *perhaps more*, of the ailments of men come from a want of sufficient knowledge of their frame, or a disregard for it.

Considering how men are educated to view life,—the body, its organs and powers, and their relation to external nature,—it is not at all surprising that this should be so. Out of the ignorance of Anatomy and Physiology, have grown two radical errors:

1st. The body, its faculties and powers, are supposed to have an indefinite capacity of endurance, both of use and of abuse;—and hence have arisen innumerable disorders;

2d. Diseases, derangements, injuries, are, in some way or other, supposed to be the direct acts of Providence moving in a mysterious way, and not to come from human agency,—from our neglect or misuse of Heaven's gifts.

"Diseases are thy servants, Lord,
They come at thy command,"

is more than an adjuration of the pious poet,—it is too much a common faith; and therefore we are not taught to use the means in our hands, nor made to feel our own responsibility for the preservation of our health.

To say nothing of those disorders that come from dissipation, I believe that the whole chapter of accidental injuries is caused by violation of the natural laws, through ignorance often, through temerity oftener; and, in most cases, for want of that care which is usually given to the preservation of property.

The ordinary diseases of the human body, fever, consumption and inflammations, and derangements of the digestive apparatus, nervous system, &c., though not so palpably the consequences of the violations of the laws of our members, as what are called accidents,—yet, I doubt not that most of them can be charged remotely or directly to these errors.

The earth was given us by a generous Providence for our habitation. Our organs and their functions, and the necessities of our frames, are perfectly fitted to external nature. Between the wants of the animal body and the elements there is a beautiful harmony. For every need of our organs or our life, God has created an abundant supply. Some of these things are supplied to us all ready for use,—as the air for the lungs and respiration, the light for the eye, the water for drink; other things are given to us in the raw material, unfit for use. But then we have intellect given us to perceive the powers and worth of these, and their convertibility to such shapes or combinations as our bodies may require. We have, also, hands to do this work,—and thus has our beneficent Creator provided for our clothing, our shelter, our food and our exercise. So far mere life is maintained. But this is done in the best

manner by the use of every faculty and organ ; for the exercise of every one of these is not only necessary for its own development, but for the health and energy of all the rest.

By the faithful and discreet use of all these means and powers,—by not corrupting the air we breathe nor the water we drink,—by suiting our food exactly to our powers of digestion and to the wants of nutrition,—by adapting our clothing precisely to the temperature, and the power of the body to sustain atmospheric changes,—by protecting ourselves, by house and by fire, from the elements,—by a proper exercise of all our faculties, neither timid nor rash, neither abusing nor exhausting them, nor letting them rust from neglect,—we may probably live to a good old age, and avoid many if not most diseases. Certainly we may thus escape all accidents, and very materially prolong life on earth.

This requires much study and continual observation :—

- 1st. To understand the structure of our bodies ;
- 2d. To know the relations of our organs to the external world ;
- 3d. To learn the use and extent of our faculties.

Herein lies our fundamental deficiency. We want the proper knowledge to begin with, and a habit of observation afterward. Consequently we have a world full of almost innumerable diseases, and premature death comes upon most men. Hence, in Boston, from 1811 to 1839, instead of holding on in a life of vigor, until finished by the exhaustion of old age, from 33 to 43 per cent. of the population died before they passed their fifth year ; and less than seven out of one hundred reached their threescore and ten. In Concord, 22 per cent. died under five years, and eighteen in every hundred passed their seventieth year. The average duration of life for the last thirteen years, in Concord, was only thirty-seven years and five months,—and even this period was far from being a perfect life, for the whole catalogue of diseases was fastened upon this brief earthly space.

A careful observation shows how this happens. Considering the complicated structure of our bodies, the almost infinite variety of circumstances that may affect them for good or for evil, and the perpetual necessity of adapting the material, the support and food of life, to our organization. I believe that men give less time to the study of the laws that govern these matters, than they do to the regulations of their animals, or their machinery, which contribute to their profit or pleasure.

I can explain this better by examples.

I was long in the habit of attending, in way of my profession, upon the family of a very sagacious farmer. He always lived with his eyes open, and was a keen observer of everything but his own frame. Hence he was very successful in raising pigs and managing cattle. He carefully watched the effects of the food, and varied it to suit the appetite and health of his animals. Meal, potatoes, corn, pumpkins, boiled or raw,—mixed in every proportion or singly,—were prepared and changed, just as he saw that the hogs would thrive the best and fatten the fastest. Hay, corn, oats, meal, roots, cut-hay, these were given to his oxen and horses, according as he noticed the effects on their strength, spirit, and power of endurance. For these purposes he had no fixed principles or inflexible habits. But his daily observation of the effects of food was his law of permanence or change.

He told me once, rather incidentally than otherwise, that for a year or two he had suffered much from heart-burn or acid stomach. He felt it somewhat, after breakfast, and so much after dinner as to impair his energies, and sometimes so severely as to prevent the possibility of labor. On some days this was very distressing. But he very rarely had this pain in the evening. On inquiry, I discovered that he ate brown (rye and Indian corn) bread for breakfast, and the same more plentifully for dinner ; but for supper he ate wheaten bread. Occasionally he had Indian pudding at noon, and then his stomach suffered the most distress. The same attention to the effects of his own diet, that he gave to the effects of their food on his cattle and hogs, would have detected this error in its very beginning, and might have saved him many months of suffering. But when I proposed the change, he hardly comprehended the necessity.

I know of some men, who make it a rule to work their horses at the *top* of their strength, using them only in their fullest flesh and spirit, and resting them before much fatigue. But they work themselves at the *bottom* of their strength. If they rest, it is only when nearly or quite exhausted, and they return to action as soon as they gather power to crawl to their labor.

A provident economist, in this town, was very careful in the usage of all his materials. He told me often, with much apparent satisfaction, "that his chaise had lasted more than twenty years, and did all the family business. But he had never allowed it to be used in the mud or rain, nor on slight occasions, and always

drove very cautiously; for though these might be of no great consequence immediately, yet they all, put together, wore upon the chaise, and would hasten its final destruction." At other times, he told me, that "he always considered all that he could get out of his own body by hard work, extra exertions, or night labor, as so much clear gain."

These are strong cases, but they illustrate the frequent uses, exposures and abuses of human health. It is not to be wondered at, then, that so many have dyspepsia, rheumatism, or fever, or so impair their powers of life as to induce disease, or leave the system open to attacks, or induce premature old age.

There are two opposite principles or notions somewhat common, both warring against health, interfering with the vital energies, and rendering the human frame more or less susceptible of disease.

First. There is a sort of stoicism, relative to food, labor, and self-sacrifice. Men, under the influence of this feeling, eat everything that is set before them, of whatever kind, and however prepared, whether it suits their digestive powers or not. To think any food that is offered them indigestible, and therefore unsuitable to them,—to request any change on their account, savors to them of childish fault-finding, and of unmanly selfishness. With the same feeling they go through every variety of labor and exposure, to which business or pleasure, duty or kindness may call them. Through fatigue, through severe cold, storm or heat, they run and toil, forgetful of the animal machinery by which they move, and regardless of the influence of the elements, or over-action upon it. Of course these feelings and habits must open the way to digestive disturbance in some, and to colds, rheumatisms, fevers, &c., in others.

Second. There is often precisely the reverse feeling,—a selfish regard to appetite and comfort. Governed by this, some eat more for appetite than for nourishment. They regard good eating, but not good digestion. They swallow crudities, perverse cookeries and absurd mixtures, provided these please the palate, but the poor stomach is forgotten. Others err by the quantity of their food,—they thus overtax their digestive powers, and often derange them. If not this, they are stupid and sleepy after eating,—their activity of life is for the time suspended, because all the nervous energies are absorbed in aid of the over-tasked stomach.

The selfish regard to personal comfort, which avoids the exercise of some or of many of the organs or powers, and thereby leaves them feeble,—which abhors the ordinary exposures, and thus renders the body incapable of enduring the changes of temperature which it must sometimes meet,—this, in various ways, disarms the system of much of its vital energy, prevents the full development of life, and reduces the power of resistance to those influences which are apt to engender disease.

There is one other important evil following from this ignorance of the laws of health; that is, a total misconception of the nature and location of disease; and, therefore, a want of a guide to the way and means of recovery; and many, in attempting to attain this, carry their bodies through all sorts of experiments, even those of an opposite nature, to cure the same disorder. On the other hand, every sort of disorder is submitted to the same experiment, as if every possible combination of derangement and of remedy would produce one and the same result of health and strength. Hence arises quackery, which is the natural fruit of popular ignorance upon the subject in which it pretends to operate.

One man advertises that all diseases are primarily in the blood, and for this state of things he has a certain remedy. He finds many people with all kinds of ailments, to believe him, and they gladly try his method upon themselves. Another rises and declares that all diseases originate in the liver, and straight the former patients change their faith; with no change of symptoms or evidence, they suddenly cease to believe their various derangements come from the blood, and become convinced that they proceed from the liver, and take the corresponding medicine. From the liver to the stomach,—from the stomach to the nerves,—their ignorant credulity bandies about their fickle faith, while their poor frames endure all the trials of ignorance, and their impoverishing purses pay all the cost.

Men who thus submit themselves to these varying experiments, would not, upon the same evidence, submit their watches, which they understood, to the hands of a tinker, who pretended that he could remove every difficulty by one and a single process.

To mend a clock, a wagon, or a shoe, a man must know his business. He must understand the material on which he is to operate, the nature of the injuries which he is to repair, and the fitness of the substance with which he is to make the reparation,—otherwise, people will not entrust their property in his hands, because they examine these things for themselves, and know somewhat of their structure and

their injuries. To acquire these arts sufficiently to gain popular confidence, requires at least four years, and often seven years' apprenticeship;—whereas the longest pupilage in medicine is three years,—and the two great medical colleges in Kentucky, with five hundred and thirty-five students in attendance, demand only two years' study to graduate a physician and fit him for healing all sorts of diseases. It takes, then, from four to seven years to prepare a man with knowledge and skill sufficient to mend a shoe, a wagon, or a watch,—while it takes only from two to three years to fit him to mend a man. This in course of regular education,—but in quacks it requires no time at all. In each case, the measure of preparatory knowledge is precisely in accordance with the popular demand. We meet, now and then, with some singular instances, which illustrate how much less talent, study and devotion it takes to obtain popular confidence in a curer of diseases, than in a maker of harnesses or colorer of clothes.

But I am often met with the objection, that men cannot always be watching their health; one may as well die at once, as live in perpetual fear of death. To this I can only answer by quoting a single example:

A man whom I have long known, Mr. —, is a very cautious, bold, and successful stage proprietor, and manifests his wisdom in the management of his coaches and his horses. He first learned, as thoroughly as he could, the powers, capacities and liabilities of his animals, and then the uses and the effects of the uses to which he wished to put them. He observed carefully the effects of various kinds of food, and this at different seasons, and would tell the best method of distributing the powers and exertions of a horse through a long life. With these principles and this knowledge as starting points, his horses were never out of sight. The least limp of foot, or variation of breath, or neglect of eating, led to further inquiry, and, if need were, to suspension from labor, or to change of food, until the incipient cause was removed. The consequence was, his horses did the utmost amount of work even to old age.

So also with his coaches. He knew the power of every spring, bolt, band, and strap, and how much weight, and jolt, and jar each could bear. He knew likewise the variations of the roads, rough and smooth, soft and hard, and suited the loads upon the coaches to this varying exposure. Therefore these were never overloaded. He kept his eye on these vehicles, and noticed the process of wear and decay. And whenever any part was getting weak, he had it repaired before any breaking could happen.

Not so was his observation and management of his own person. He had a slight pain and stiffness in his knee, but did not notice it. It increased, and he then only added new energy to effect the usual labor. It swelled; he complained of it as interfering with his present activity, and kept at work. In about ten days the inflammation and swelling were so great as to prevent all possibility of motion. Then he was still, though unwillingly, and went to his business as soon as his knee would permit motion, before it was healed. The inflammation returned. He was again still, but could not submit to it, as he did to the quiet of a lame horse, or the repair of a weakened wheel.

The same observation of the laws of his own being, that he had given to the nature of his horses, and the structure of his coaches, would have discovered the least variation in his knee; and the same conscientious obedience to those laws would have suspended its use, as readily as he suspended the use of a limping horse, or removed a worn, but not broken, spring.

The remedy for all this is in a better education. If our people were as well taught the organization of their bodies, as they are the structure of a clock or a wagon; if they understood the uses, powers and limits of the animal frame, as well as they do the objects and capacities of machinery, they would make a much more faithful use of their health and strength, and save themselves from many diseases.

For this purpose, our children should be taught in school the law of their members, as early and as carefully as they are taught geography or philosophy. Anatomy and Physiology should be studied, not as barren facts, but as a law for their government. They should have it impressed upon them as a conscientious duty, to take care of their health, to develop and preserve their powers of life in their fullest energy. They should feel that they have no more right to impair or diminish, or pervert, or waste this life, by negligence, by misuse, or by over-exertion, and thus commit fractional and gradual suicide, than they have to put an end to it by a blow, in complete suicide. Both of these are violations of the same law of society, of nature and religion. They differ in degree, but not in kind.

Every child, then, should be first taught the nature of his own bodily machine, and the relation of this to external objects. Then he should be made to feel a con-

scientious responsibility for its faithful use. Upon himself it must depend whether this shall give him the highest uninterrupted pleasure or the greatest pain,—whether it supply him with wealth more than all other means, or involve him in hopeless poverty.

Very truly and

Respectfully yours,

EDWARD JARVIS.

Letter from Dr. M. S. Perry.

BOSTON, Oct. 25, 1842.

DEAR SIR,—I received your letter of Sept. 23d, in which you propound to me the following question:—"In the present state of the science of Physiology, how great a proportion of suffering, of disease, of a diminution of the physical capacity of usefulness, and of the abridgment of life, comes from sheer ignorance, and which, therefore, we might hope to see averted if the community had that degree of knowledge which is easily attainable by all?"

To this question, I regret to say, I cannot give any definite answer; but I have taken pains to record the exciting causes of disease, (as far as they could be ascertained,) in fifty cases, which have come under my care since I received your letter, and in twenty-five more, which, within the last two months, have entered the Massachusetts General Hospital. These last were recorded by the resident student. Some of those that came under my care were children; but I thought I would take fifty successive cases, without reference to age. Those that entered the hospital were adults.

The result is, that more than half of the fifty cases were induced by causes which might have been avoided, if the individuals had understood the laws of health; for I may safely say that not one of them did understand those laws.

The cause of sickness, in fourteen of the cases received at the hospital, was ascertained. They were, exposure to wet and cold, fatigue, and want of exercise. Of the other cases, whose cause was not known, it is but fair to suppose, from the nature of the diseases, that more than half of them arose from similar causes. Allowing this supposition to be correct, we shall have more than three quarters of the twenty-five patients made sick by causes which might have been avoided, if they had possessed the requisite knowledge, and been placed under circumstances where they could have applied it.

I think a large majority of the patients that come under the care of physicians, are made sick from the following causes: Exposure to atmospheric changes, excess in eating and drinking, fatigue, impure air, and want of exercise. Now, in order to avoid these exciting causes of disease, an individual should not only understand the laws of Physiology, but the influence of physical and moral agents. Important as these subjects are, I will venture to say that not one individual in a hundred amongst us does understand them; and if you can direct the attention of the community to them, and induce them to introduce the study of these sciences into our Public Schools, you will confer a great blessing upon the present and future generations.

It is generally supposed that there has been, within the last few years, a decrease in the annual mortality in this city. But in a paper lately written by S. Shattuck, Esq., on the vital statistics of Boston, he says, "the average value of life is greater now than during the last century,—but not as great as it was twenty years ago; that it was at its maximum from 1811 to 1820, and that since that time it has somewhat decreased." He also says, "that it is a melancholy fact, and one which should arrest the attention of all, that forty-three per cent., or nearly one half of all the deaths which have taken place within the last nine years, are of persons under nine years of age, and the proportional mortality of this age has been increasing."

W. R. Gray, Esq., in a paper published in the last number of the Statistical Journal says, "that the rate of annual mortality has increased in England, since 1820, ten per cent., and probably twelve and a half. These facts show the importance of directing public attention to the causes of disease, in order, if possible, to avert a still greater annual increase of suffering and death.

Respectfully yours, &c.

M. S. PERRY.

HORACE MANN, Esq.

This list of authorities might be indefinitely extended. Many personal interviews with eminent members of the medical profes-

sion have confirmed my belief in the above conclusions. But to any one who understands even the more obvious principles of Physiology, the evidence which is inherent in the nature of the subject, supersedes the necessity of extrinsic proof. Yet thousands of the more advanced scholars in our schools are engaged in studying geometry and algebra, rhetoric and declamation, Latin and Greek, while this *Life-Knowledge* is neglected. Having passed through our Public Schools, through select schools and academies, without ever having had their attention turned to the great science of health and life, our young men and women, who are, or who are soon to be, the fathers and mothers of the next generation, devote their leisure time to the reading of novels, and the other bubble literature of the day, and neglect that knowledge on which so much of personal, and almost all of domestic happiness and hopes are so obviously founded. In the fallacious tranquillity of ignorance, pernicious indulgences are yielded to, indispensable observances are omitted, unhealthful habits are formed; and, as the inevitable consequence, debility or sickness ensues, old age is antedated, feeble parents are succeeded by feebler children, the lineage dwindles and tapers from less to less, the cradle and swaddling-clothes are frequently converted into the coffin and the shroud, occasional contributions are sent off to deformity, to idiocy, and to insanity, until, sooner or later, after incredible sufferings, abused and outraged Nature, finding all her commandments broken, her admonitions unheeded, and her punishments contemned, applies to the offending family her sovereign remedy of extinction.

Considering, then, the paramount importance of this subject, it seems to me desirable that it should be commended to the favor of the public, not merely by argument and the authority of distinguished names, but by a presentation of some of its leading and most essential doctrines. The duty of prescribing text-books and of regulating the studies in our schools, is devolved by the Legislature upon the school committees. These committees are chosen annually by the people. The people, then, are to be reached,—not by coercion of law, but by persuasion and conviction. And I am so well satisfied that the people of Massachusetts are competent to understand and appreciate the preponderating merits of this study; and that, to ensure its priority over any and all others of the higher branches pursued in our schools, it only needs to have its claims presented before the tribunal of an intelligent public opinion, that I propose to occupy the residue of this Report with a brief outline of the more obvious principles of physiological science, and of their practical bearing upon the great interests of health and life.

What we are accustomed to call the Human System, is a *variety of systems*. It is not one, but many. Between these different systems there is the most remarkable diversity of appearance, structure, functions, uses; yet all are harmoniously associated together for the formation of a complex whole.

1. In the first place, as a foundation and framework for all the rest, there is the Osseous or Bony System, consisting of about two hundred and forty different pieces. A great portion of these are levers. They are adapted to raise weights, or to overcome other resistances. Had the farmer and the manufacturer, or the mechanic of any kind, a mind properly instructed on this subject, how

elevating and delightful it would be for them to trace analogies and resemblances between the laboriously wrought utensils and instruments which they use, and those similar but more perfect instruments which, by the benevolence of God, grow unconsciously into symmetry and strength, and operate with such precision and celerity, in their own bodies and limbs.

Some of our bones are not levers, but defences; and some serve the double purpose of a defence for what they contain, and as a centre of motion for some other parts; yet all of these grow where they are needed,—of the requisite size, form, solidity, strength,—without oversight or direction of ours, so that when we wake up to a consciousness of our formation, (if we ever do wake up to that consciousness,) there we find these solid portions of our frame, each fitted to its appropriate place, and each performing its assigned duty, according to the benevolent intentions of its Divine Architect.

2. There is the Muscular System. This is wholly different from the osseous or bony. The one is solid and almost unbending; the other pliant, flexible, elastic. The muscles are fastened at each end to some bone, or some organ intended to be moved by them. They all have the power of contracting themselves,—that is, of diminishing their own length, and by so doing they bring their extremities nearer together, and thus cause motion. If the bone to which one end of a muscle is attached is a fixed point, then the whole motion is communicated to the organ or part to which the other end is fastened. Such is the case with the muscles of the eye,—one end being attached to an immovable bone, and the other to some part of the eyeball; and thus all its variety of motions, whether to the right or left, upwards, downwards, or obliquely, are effected. The infant uses all these muscles, and is excited to emotions of wonder and delight by the visible objects which surround him, before he knows that he has either an organ of vision or muscles to direct it. This is not to be wondered at; but it is to be wondered at that so many persons go through a long life, as ignorant as an infant of these beautiful facts. In the human body there are said to be between four hundred and forty and four hundred and fifty different muscles. With these, all the myriads of different motions of which we are capable, are performed. The muscles overlay, interlace, and cross each other in all directions, and yet so admirable is their arrangement, and so exquisite the skill with which they are fitted to play upon each other, that their whole work is done without perceptible friction, and in absolute silence. What machine or mill, made by the art of man, consisting of more than four hundred bands or cords, moving more than two hundred solid pieces, and having the requisite number of joints and pulleys, was ever so skilfully constructed as to move *inaudibly* for fifty or seventy years? In the most rapid and dexterous operation which an artisan ever performs, when the tool, which he grasps in one hand to fashion the material which he holds in the other, moves with such velocity as almost to elude eyesight, neither the tool nor the material has half the motions, which, at the same time, are taking place in the muscles of the eye and hand of the operator. Yet the work of man we admire, while, our whole lives long, we regard with stupid indifference the works of the Creator!

3. Next in order may be mentioned the Nervous System. Of this system, the grand, central body is the brain, which is a mass

or congeries of nervous matter. The brain sends off nerves to each of the five senses, and to every part of the body. The pairs of nerves which go to the eye, the ear, and the organs of taste and smell, pass to their points of destination by the shortest convenient route. Through these media the mind holds intercourse with the external world. It is along these lines of communication that impressions from outward objects are transmitted inward; and that each different property of color, sound, odor, taste, makes itself perceived in the dark and silent chambers of the brain. A few years ago, an apparatus was invented in England, which consisted of bundles of metallic wires, several miles in length,—each wire being carefully wound round with some covering impenetrable to moisture, and the whole placed under ground to secure them from injury. At each extremity of these wires, there was a system of corresponding signs, and the apparatus was so adjusted that, by means of galvanism, any motion produced at one end of the train, would write out its corresponding and intelligible sign at the other. In this way information could be communicated along the whole track with the speed of lightning. The invention attracted great attention from the learned. Something of the kind has lately been projected in this country, and perhaps, at a future period, it may be improved, and applied to purposes of practical utility. But what is this compared with the optic nerve, which, although only two or three inches in length, makes known to us the existence of objects, however magnificent or minute, with all their variety and splendor of coloring, alike whether they are within the reach of our fingers, or whether they are stars in the depths of immensity! Yet we accord our admiration to the mechanism of man; but, through general ignorance and stupidity, withhold it from the infinitely greater skill of the Maker of man.

With what a variety of sounds does the nerve of hearing,—a little soft cord, two inches long, and not larger than a straw,—make us acquainted! No arithmetic can compute the number of sounds which come from the hum or chirp of insects, from the song of birds, from the occupations, the speech, or the music of men, from the voices of animals, from trees and streams, from the ocean and the air,—and yet with what facility and distinctness does this bit of nervous matter communicate the whole to the mind, so that we can readily assort or unravel these sounds, and refer each to its true origin;—and all this is effected without any artificial change of stops or keys.

If we admire a single instrument of many strings, or a cathedral organ with its many pipes, what ought we to think of that minute contrivance, the ear, which within a space of less than one square inch, vibrates to every sound in the vast orchestra of nature!

By far the largest branch of nerves which the brain sends off, passes down in the interior or hollow of the spinal column, and is thence distributed to every part of the body. This branching or ramification of the nerves is inconceivably minute. They penetrate all parts of the frame, and stand as sentinels, at every point, to warn us of the approach of danger. There is no spot on the surface of the body so minute that we can touch it with the point of the sharpest needle, without striking, we know not how many of these nervous filaments, which immediately give us notice of the aggres-

sion. In fineness, as compared with the nerves, a spider's web or the thread of a silk-worm, is as cord or cable.

But the nerves which descend along the interior of the spine, though alike to the eye, to the touch, or even to any chemical test, are wholly different in their functions. That part of the branch which occupies the posterior or back side of the column is appropriated to the transmission of sensations to the mind. They are the nerves through which we *feel*. Those, on the other hand, which occupy the anterior or front side, are nerves of motion,—those by means of which we *act* or *move*. If the nerves of *motion* were cut or broken off at any point, all parts of the body below the point of separation, would lose the power of motion; and, therefore, though the extremest pain from laceration or burning, were suffered in any part dependent on those nerves, yet we should be unable to escape or withdraw from it. On the other hand, if the nerves of *sensation* were destroyed, our feet or hands might lie in the fire and be consumed, without our feeling any sense of pain as a warning to remove them. The rapidity with which communications are made along these thoroughfares is amazing, being equalled only by that of light, electricity, galvanism, or other of the imponderable bodies. If a man in a crowd feels the heel of another beginning to press upon his foot, the intelligence is forwarded to the brain, along the nerves of *sensation*; and forthwith, an order is despatched from the brain, along the nerves of *motion*, for the removal of the foot out of harm's way. If the person enjoys good health and has ordinary quickness, the information will be transmitted to the brain, and the order sent back to the foot, in sufficient season to save it from injury. This process takes place in all cases when the hand is exposed to be burned, by any heated substance whether solid or fluid. The attention of thousands has been arrested by the celerity of movement with which the hand has been withdrawn from contact with a basin of hot water or a hot shovel, who never knew or thought of the wonderful mechanism by which, in the momentary interval between the touch and the escape, a message had been sent from the hand to the brain, delivered, considered, and an answer exactly adapted to the exigency of the case, forwarded to the scene of action by another post route, in season for the removal of the endangered member. In the case of the juggler, the tumbler, and the rope-dancer, with what inconceivable velocity and frequency must the couriers of the mind pass up the nerves of *sensation* with their intelligence, and down the nerves of *motion* with their orders.

There is still a third set of nerves which are connected with the *involuntary* motions of the vital organs,—with the beating of the heart, with the motions of the stomach in digestion, of the lungs in respiration, &c. &c.

4. Again, there is the Digestive System, by which the crude and heterogeneous masses that are taken as food, are broken down and dissolved in such a manner, that they can be carried by the Circulatory System to every part of the body,—to become in one place bone; in another, muscle; in another, brain; in others, hair, or teeth, or skin;—here to suffuse the cheek with the beautiful hues of health, and there to light up the eye with the fires of intelligence.

[To be continued.]

[For the Common School Journal.]

THE COMMON SCHOOL GRAMMAR, PARTS FIRST AND SECOND, DESIGNED FOR THE USE OF PREPARATORY AND GRAMMAR SCHOOLS. BY WILLIAM BENTLEY FOWLE.—BOSTON, 1842.—FOWLE & CAPEN.

It is the fault of most elementary works that they deal more with rules than with principles, and compel a reliance rather upon a quick memory than upon independent thought. The arbitrary divisions and artificial definitions, of which they are generally made, are necessarily repulsive to the active and curious minds to which they are presented. It is so much more easy to comprehend general laws, than the particular deductions from them, and so much more pleasant to understand, than barely to recollect, that it might even be judicious to teach Algebra before Arithmetic, and it certainly would be well to construct school-books altogether out of those clear and intelligible principles which lie at the foundation of every science.

Mr. Fowle has written two treatises on grammar, for the use of common schools, which seem to be framed upon this method, and to be singularly free from the usual defects. They are, in the main, an attempt to introduce into general notice and acceptance some of the reforms which all philosophical writers upon this subject have advocated,—reforms based upon the natural structure of language, and already unconsciously followed in ordinary conversation. Changes may, indeed, be carried too far, or proposed too suddenly, to be at once received; but there is little in these works of which teachers have not, for some time, seen the use and even the necessity. The complete order and the brevity of expression, which result from the new arrangement which Mr. Fowle has adopted, are the more worthy of note, from the evidence they afford of the entire uselessness of the vicious divisions which Mr. Murray first introduced. It is easy to see the reason of this. When words are reduced to their most general classes; when, for instance, all qualifying terms are made either adjectives or adverbs, definitions become distinct, and their application easy; so that these changes, without being violent or unnatural, tend to relieve the scholar from the necessity of either keeping in his mind frivolous shades of difference, or of repeating by rote and at a venture the words of his text-book.

The conversion of participles, according to this method, into verbal adjectives appears somewhat bold; but the same usage is, in fact, preserved in all languages which admit of changes of termination, as the French and Italian,—and it is much in its favor that it frees the grammar from a separate passive voice, and that complicated structure of compound tenses and moods, which have been transferred from the ancient languages into the English, without regard to their natural differences.

These alterations give to Mr. Fowle's little volumes a remarkable simplicity of arrangement; the syntax especially becomes an excellent example of conciseness and precision, and such qualities are both so rare and so important in elementary works, as to deserve especial notice.

The facility, however, which broad and general divisions of words give to the clear understanding of the rules which are applied to them, and the power of independent combination and analysis of language, on the part of the scholar, which a consistent theoretical

treatise affords, are with us the principal recommendations of these books.

[As the editor agrees in the estimate of the grammar recommended above, he has cheerfully introduced this notice, although, in one or two particulars, he differs from the general principles of the criticism.]

AMERICAN INSTITUTE OF INSTRUCTION.

THIS society began its fourteenth annual meeting on Tuesday, the 15th, and closed on the 17th, at Pittsfield, Mass. The exercises were of unusual excellence and interest.

The Introductory Address was by the Rev. Dr. Humphrey, President of Amherst College. The greater part of it was occupied with a plain but powerful argument for the introduction of the Bible into schools, not only as a help to the teacher in conducting the devotional exercises, but as a reading book for the upper classes. This discourse, together with several others delivered before the Institute, is to be printed, and we shall hope to present portions of it to our readers.

In the afternoon of Tuesday a lecture was given, by Rev. Solomon Adams, of Boston, upon 'Classification of Knowledge,' with various illustrations from practical observation; and a lecture by that veteran in teaching, Rev. Cyrus Peirce, of Nantucket, upon 'The Best Methods of Teaching to Read.' As this is the most important point in the whole business of instruction, and as the method pointed out was new to most persons in the audience, this plain, practical lecture was listened to with the greatest attention.

On Wednesday, the 16th, four lectures were given,—by D. P. Page, Principal of the English High School, Newburyport, on 'Advancement in the Means and Methods of Public Instruction'; by Alfred Greenleaf, of Brooklyn, N. Y., on 'The Faithful Teacher'; by Roger S. Howard, Principal of the Latin High School, Newburyport, on 'A Few of the Hows in Teaching'; and by Professor J. H. Agnew, of Newark, N. J., upon 'The Moral Dignity of the Teacher's Profession.' These very excellent lectures will, we hope, be ere long given to the public. On the evenings of the 15th and 16th, a discussion, of great interest, took place, upon the subject of Corporal Punishment in schools. This was conducted principally by Dr. C. Mason, Mr. Peirce, and D. P. Page; the two former against the use of the rod altogether,—the latter reserving it as a last resort.

On Thursday, the 17th, lectures were given, by R. B. Hubbard, of Worcester, on 'Some of the Defects in our System of Common Education'; by Dr. Lambert, on 'The Physiology of the Brain, and its Connection with the other Vital Organs,' with illustrations of the structure by means of the manikin; by J. E. Murdock, on 'Enunciation and Vocal Gymnastics'; and by S. J. May, Principal of the Normal School, Lexington, Mass., on 'The Wants of our Common Schools.' Of these we shall speak hereafter.

As officers of the ensuing year, very nearly the same gentlemen were chosen as had held the offices during the previous year: S. Adams, of Boston, being made Recording Secretary in place of T. Cushing, Jr., who declined re-election.

In future numbers we hope to be able to give full accounts of the discussions, and extracts from the very valuable lectures.

THE SCHOOL FRIEND: OR, LESSONS IN PROSE AND VERSE; FOR THE USE OF SCHOOLS. BY THE AUTHOR OF AMERICAN POPULAR LESSONS.—NEW YORK: W. E. DEAN.—1842.

THE attention of the readers of the Journal has been repeatedly called, of late, to the importance of introducing into schools for the younger children, the study of the objects of nature. One of the difficulties in the way of this desirable change, is the want of suitable books; a want, however, which cannot long remain unsupplied. Books on subjects of Natural History, adapted to the capacities of children, and to the ability of existing teachers, will doubtless soon be provided.

Meanwhile, the little work whose title is given above, is extremely well fitted to be an introduction to the study. It is very well prepared, and adapted to furnish the young learner with a large stock of valuable facts and ideas upon the things by which he is surrounded, to awaken his powers of observation, and to exercise his thoughts. There are other and still higher objects which it has in view, as may be learnt from the following extracts from the introduction. This is certainly a much more valuable book for children than most of those now in use, and we recommend it to the attention of teachers and parents who agree with us as to the importance of teaching things rather than words.

"For many years I have been persuaded that common education has a higher function than it has ever assumed, and that it might employ better instruments than it ever has employed. Long engaged in teaching myself, I have found school-books my greatest help or hinderance. I have never regarded reading as an ultimate end in education. To teach to read efficaciously is an important consideration. To make the reader understand and love his book, as the means of cultivating the intellectual and moral nature, has ever seemed to me the chief use of teaching to read. I saw in my early life that to teach to read without teaching to know, without making the book the organ of truth, and the proper interpreter of duty, is to make instruction a mechanical art, and its result a dead letter: therefore, when I composed books for elementary teaching, I endeavored to give them the attribute of life, to make them intelligible, and to make them felt by the young reader.

"As far as possible, I have conformed my instructions to *truth*,—if not to true narrative, to true principles,—to examples of right conduct, and to warnings against bad conduct, from the doctrine of natural consequences. I have tried to point out to the young the wisdom and goodness of God in creation, and to make it appear to them from the beginning of life, from the first stage of intellectual development, that they are themselves intelligent parts of a beneficent system to be revealed to them by observation and study; and I have held up to them for admiration, as far as I have had opportunity, the best men that have lived; and have commended the services rendered by them to mankind, as examples for them, to be and to do, as the benefactors of our race have afforded both pattern and encouragement.

"Children go to school to be taught goodness and truth, and the love and practice of both, as much as to be taught letters. What is good for one child is good for many; what is good in private

education is good in public. I have constructed my books in regard to the primitive ignorance from which every mind starts, and with regard also to the progress of which it is capable, and have especially designed them for common schools.

"The School Friend is an imitation, rather than a translation, of a German book, employed in the schools of Saxe Weimar. When I was made acquainted with the beautiful spirit and economy of the German schools, I could not satisfy myself without seeing the books used in those schools. Cousin has described the books to be of admirable *adaptation to children*,—the very point in which our books generally fail. When I received the books, by the aid of a friend familiar with the German, I was indoctrinated thoroughly with their character. The School Friend, of which I have the one hundred and twenty-eighth edition, contains lessons in verse and prose, describing first a school,—its uses and beneficent design, and the conduct required of the children in it. It proceeds to give them examples of good and bad conduct in forty-six stories, in brief form, and further instructs the pupil in his own constitution. What am I? what can I do? what ought I to do?—as a physical and moral being,—as a member of society, and a subject of divine and civil laws?—forms the subject matter of the second division; and the third contains some expositions of the laws of nature, particularly those of the animal, vegetable, and mineral kingdoms, by means of which human art and comfort are chiefly promoted.

"The School Friend doubtless accomplishes its proper design in Germany, but it is a national book, and is so filled with allusions to customs peculiar to that country, that to make it useful in this, it must be Americanized. This I have done to the best of my ability."

If, after children had been taught to read from the First and Second Parts of Mr. Swan's Primary School Reader, The School Friend should be put into their hands, instead of the nonsense of the Spelling Books, with what pleasure would they advance; and if, instead of spelling nonsense columns, they should, as soon as they can write, be set to write these stories, or relate these facts from memory, after hearing or reading them, with what delight would they learn to spell.

SPELLING.

A CORRESPONDENT has the following remark in regard to it: "I was glad to see your notice of Mr. Swan's books. It seems to me, that he has got hold of the true philosophy. I think we may as well ask a child to take *nitric acid* and *potash*, and infer from these, *salt-petre*, as to take i (eye) and t (tee,) and infer from these *it*. But in this very unphilosophical way, have we attempted to teach children,—and, till Mr. Swan's books, all have supposed that the sounds of the words could be inferred from the names of the letters."